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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/831,025	12/11/2001	Friedrich Boecking	R.35976	8376
2119	7590	07/28/2005	EXAMINER	
RONALD E. GREIGG GREIGG & GREIGG P.L.L.C. 1423 POWHATAN STREET, UNIT ONE ALEXANDRIA, VA 22314			GANAY, STEVEN J	
		ART UNIT	PAPER NUMBER	
			3752	

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/831,025 Examiner Steven J. Ganey	BOECKING, FRIEDRICH Art Unit 3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 4/21/05.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 18-31, 33-36, & 38-44 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 18-20, 22, 23, 25, 26, 28-30, 34, 40 and 41 is/are rejected.
 7) Claim(s) 21, 24, 27, 31, 33, 35, 36, 38, 39 and 42-44 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____.

DETAILED ACTION

1. Receipt is acknowledged of the amendment filed on April 21, 2005, which has been fully considered in this action.

Claim Objections

2. Claims 18, 23, 30, 36, 42 and 43 are objected to because of the following informalities: In each of these claims the recitation "at least one injection orifice" should be changed to --the at least one injection orifice-- since it appears that a new orifice is being claimed, however, it is only further defining the at least one orifice recited in claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 18-20, 22, 23, 25, 26, 28, 29, 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nozaki.

Nozaki shows an injection nozzle comprising a nozzle needle 7/43; at least one orifice 34; truncated cone shaped nozzle needle seat 303; annular groove 760 running parallel to the base surface of the cone; and cylindrical mini/micro-blind hole 304. As to the relationship of the width of the annular groove to the diameter of the

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injection orifice, note col. 6, lines 15-17. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the width of the annular groove being one-and-a-half times greater than the diameter of the injection orifice, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). As disclosed in Nozaki, the width of the groove has to be greater than the diameter of the injection hole, therefore, the width of the groove could at least meet the "1-1/2 times greater than the diameter of the injection orifice" as claimed.

As to claims 25, 26, 40 and 41, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the width and depth ranges as claimed, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

5. Claims 18, 23, 25, 26, 28-30, 34, 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nozaki.

Nozaki shows an injection nozzle comprising a nozzle needle 7/43; at least one orifice 34; a nozzle needle seat at 304b; ; annular groove 760; and cylindrical mini/micro-blind hole 304. As to the relationship of the width of the annular groove to the diameter of the injection orifice, note col. 6, lines 15-17. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the width of the annular groove being one-and-a-half times greater than the diameter of the injection orifice, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205

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As to claims 25, 26, 40 and 41, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the width and depth ranges as claimed, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Allowable Subject Matter

6. Claims 21, 24, 27, 31, 33, 35, 36, 38, 39, 42, 43 and 44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments with respect to claims 18-20, 22, 23, 25, 26, 28-30, 34, 40 and 41 have been considered but are moot in view of the new grounds of rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven J. Ganey whose telephone number is (571) 272-4899. The examiner can normally be reached on Monday, Tuesday, Thursday and Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel, can be reached on (571) 272-4919. The fax phone number for this Group is (571) 273-8300.

sjg

7/11/05


STEVEN J. GANEY
PRIMARY EXAMINER
7/11/05